

LITOTHAMNUS NITIDUS (COMPOSITAE: EUPATORIEAE), A NEW COMBINATION BASED ON MIKANIA NITIDA (DC.) R. KING & H. ROBINSON

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ABSTRACT

A new combination, *Litothamnus nitidus* (DC.) W. Holmes is proposed. Complete nomenclature, summary of relationships, descriptions, an illustration of the new combination, and a key to the two species of *Litothamnus* are included.

KEY WORDS: Compositae, Eupatorieae, *Litothamnus nitidus*, *Mikania nitida*, Brazil, Bahía

Litothamnus R. King & H. Robinson (Eupatorieae, subtribe Glyptidinae), until now considered to be monotypic, is characterized by its shrubby habit and elliptical to obovate, coriaceous to subcarneous opposite leaves with short, stout petioles. The corymbose capitulescence has opposite branching and numerous heads, each with 12-15 eximbricate phyllaries in two series and about 15 florets. Other traits include the funnellform corollas with densely mamilllose inner surfaces, inserted anthers (at anthesis), 5-angled achenes, densely papillate style appendages, and biseriate capillary pappus with marginal setae. This combination of characters seems to obscure its relationships with other members of the subtribe. Special mention is made by King & Robinson (1987) of the remarkable vegetative similarity, particularly in habit and leaf characteristics, of *Litothamnus* with the plant presently known as *Mikania nitida* (DC.) R. King & H. Robinson (Eupatorieae, subtribe Mikaniinae). The similarity is not considered indicative of close relationship.

The genus *Mikania* is well-marked by heads consisting of four phyllaries surrounding four florets. The phyllaries are arranged into an inner and outer pair, with those of each pair appearing to be borne oppositely. Both margins of each outer phyllary are slightly imbricated over the inner pair. Although about 50 species are erect, as is *Mikania nitida*, the genus is most often characterized by its vining habit. Other traits include its opposite to sometimes whorled leaves, involucre subtended by a subinvolucral bract, corolla with well-defined tube and throat, anthers exserted from the corolla at anthesis, five-angled achenes, and barbellate capillary pappus. A more extensive discussion of the genus is in Holmes (1995).

Upon examination of a series of specimens, including type materials and photos of *Mikania nitida*, it was clear that these plants did not belong to that genus. The specimens appear to be *Mikania* because the heads have a prominent inner series of four phyllaries surrounding four florets, each with a pappus consisting of numerous barbellate capillary bristles. The heads, inner phyllaries, florets, and pappus appear disposed as they are in *Mikania*. The presence, however, of three additional phyllaries in a second outer series, rather than the presence of just one subinvolucral bract, substantiates that the plants are not *Mikania*. Additionally, several other non-*Mikania* traits further evidence that the specimens are not *Mikania*, especially when considered in combination. The anthers are not exerted from the corolla at anthesis and the corolla is tubular to narrowly funnelform, lacking the distinct separation into tube and expanded throat so evident in most *Mikania*. Finally, the achenes may have up to 8 angles, a trait found in several *Mikania*, as evidenced by the genus *Kanimia* Baker (= *Mikania*; King & Robinson 1980) originally being split from *Mikania* on that basis. In my experience, the presence of achenes with more than five angles may be considered as an invitation to examine the specimen(s) for additional non-*Mikania* traits.

The combination of traits present in the plants currently known as *Mikania nitida* characterizes them as a new species of *Litothamnus*. Thus, following the key to the two species of the genus, a new combination is proposed.

Litothamnus R. King & H. Robinson, *Phytologia* 44:80. 1979. TYPE: *Litothamnus ellipticus* R. King & H. Robinson.

Key to Species

1. Florets 4; phyllaries 7; achenes with 5-8 ribs; leaves without conspicuous tertiary veins, apices rounded to an acute, acuminate, or apiculate tip..... *L. nitidus*
1. Florets ca. 15; phyllaries 12-15; achenes with 5 ribs; leaves with prominent tertiary veins, the apices rounded. *L. ellipticus*

1. *Litothamnus nitidus* (DC.) W. Holmes, *comb. nov.* (Figure 1). BASIONYM: *Eupatorium nitidum* DC., *Prodr.* 5:180. 1836. TYPE: BRAZIL. Bahia: in sabulosus, 1830, *Salzmann s.n.* (HOLOTYPE: G-DC; Isotype: GH! [photo]). *Kanimia nitida* (DC.) Baker, *Fl. Bras.* 6(2):370. 1876. *Mikania nitida* (DC.) R. King & H. Robinson, *Phytologia* 47(2):126. 1980.
- Mikania erithalina* DC., *Prodr.* 5:193. 1836. TYPE: "Brasilia circa Bahiam in monte Serrato," 1831 (or 1832), *Blanchet 1055* (HOLOTYPE: G-DC; Isotypes: GH! [photo], NY!). *Kanimia erithalina* (DC.) Benth. & Hook. ex Jackson & Hook. f., *Index Kew.* 2:3. 1894, as "*erythalina*."
- Heterolaena nitida* Schultz-Bip. ex Baker, *Fl. Bras.* 6(2):370. 1876, *nom. nud.* in *syn.*

Shrub (to small tree?), (0.5-)1.5-2.5(-5.0) m. Older stems terete, glabrous, younger stems angular-sulcate, glabrous. Internodes 0.8-2.5 cm. Leaves opposite,

3.5-9.0 $\times$ 1.7-4.0 cm, gradually reduced in size above; petioles stout, 1.5-4.0 mm, glabrous except for the ciliate-hirsute margins, opposite petioles slightly connate by an extension of the margins of the petioles onto the stem, this ridge of tissue ciliate-hirsute; blades coriaceous-succulent, elliptic to slightly obovate, veinlets obscure, surfaces glabrous, green above, paler below, obscurely trinervate from within 5-7 mm of the base, apices rounded to an apiculate or acute point, margins entire-revolute, bases attenuate-cuneate. Heads numerous, disposed in a slightly round-topped corymb, 4-10 cm in diameter and 6-9 cm high; ultimate head-bearing branchlets 1-3 mm long, terete to angular, glabrous to crisp-puberulent. Involucres 2-seriate, the 4 inner phyllaries 8-9 mm long, ca. 2.5 mm wide, elliptic, thin, the apices acuminate, surfaces ca. 10-nerved, the margins ciliate; outer phyllaries 3, 5-7 mm long, 1.0-1.5 mm wide, lanceolate to lance-elliptic, thin, 3-5 nerved, apices acuminate, margins ciliate, the outermost (lowest) phyllary often slightly separated from the involucre. Florets 4 per head; corollas white to cream, ca. 6 mm long, tubular, teeth triangular-ovate, ca. 0.75 mm, densely mamillate, especially on the margins and inner surfaces. Anthers inserted at anthesis, collars cylindrical, ca. 2.1 mm long, appendages oblong, ca. 0.5 mm long, 0.15 mm wide. Style appendages linear-filiform, 2-3 mm long, surfaces mamillate. Achenes 2.5-3.4 mm long, tapering from apex to base, setose particularly on ribs and at the summit, sparingly so on the surfaces, 5-8 ribbed, these callose-thickened at the base; pappus biseriate, white, 5-6 mm long, of ca. 43 persistent bristles, slightly connate at base, the margins setose.

Baker (1876), in proposing the genus *Kanimia*, established priority of the name *nitidum*, or as used here, *nitidus* (King & Robinson 1980).

Litothamnus nitidus is endemic to the shrubby zone of coastal Bahía from Salvador southward to Marau.

There are two other vegetative traits that are useful in distinguishing the two species although not used in the key to species because of excessive intergradation. The leaves of *Litothamnus nitidus* are elliptical to slightly obovate and at most 9 cm long and 4 cm wide, while those of *L. ellipticus* have a tendency to be more elliptic-obovate to obovate and to 14.5 cm long and 5 cm wide.

The constant and low number of phyllaries (7) and florets (4) for the new *Litothamnus* is unusual for the subtribe. However, as treated by King & Robinson (1987), the subtribe has floret numbers as low as 4 (*Glyptis*), while the number of phyllaries may be as low as 8 (*Bejaranoa*). Mentioned in the description of this species is that the outermost (lowest) phyllary may be slightly separated from the involucre; i.e., borne at a lower position on the peduncle. This condition is more apparent in the central head of the terminal clusters of 3-5 heads. Thus, in *Litothamnus nitidus*, the outer series of phyllaries may appear to consist of two phyllaries subtended by a subinvolucral bract. Although not indicative of close relationship, a similar situation occurs in those *Mikania* with corymbose capitulescences, in which case the subinvolucral bract of the center head of the terminal clusters is borne well below the four phyllaries (Holmes 1996).

The species normally attains a height of 1.5-2.5 m, but the label of *Harley 22083* (NY) describes the plant as a tree 5 m tall, hence the reference in the description.

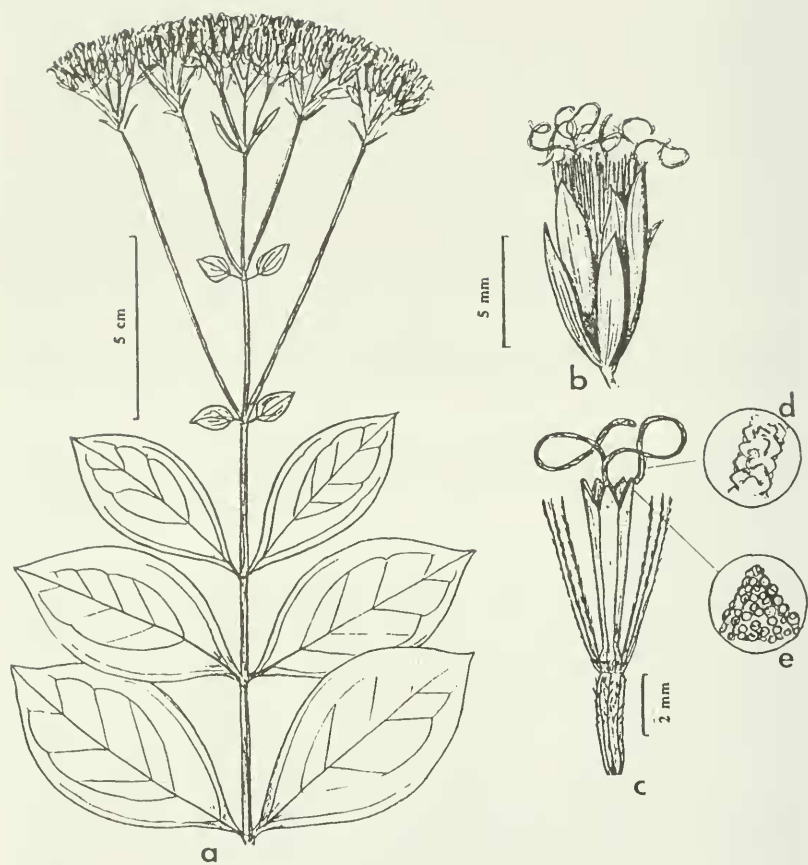


Figure 1. *Litothamnus nitidus*. a. habit; b. head; c. flower and achene; d. close up of style surface (without scale); and e. corolla tooth (without scale); after Harley, *et al.* 17600 (NY).

Additional specimens examined: BRAZIL. Bahía: Município of Salvador, Lagoa de Abaeté, NE edge of city of Salvador, dunes, 22 May 1981, *Mori, Boom, & Carvalho 14062* (NY,US); coastal dunes 2 km N of Town of Itapuã, S 12° 58', W 38° 23', near sea level, 9 Apr 1980, *Plowman & Almeida 10051* (US); 3 km de las ciudad de Salvador at oeste del aeropuerto, 12 Nov 1983, *Callejas & de Carvalho 1725* (NY,US); ca. 30 km a N do centro da cidade, estrada para o aeroporto, arredores de Itapuã, 24 Maio 1981, *de Carvalho, Mori, Boom, & Silva Guedar 728* (NY,US); Itapuã, March 1961, *Atayde s.n.* (US); vicinity of airport, Dois de Julho, near sea level, 24 May 1981, *Mori, Boom, & de Carvalho 14108* (NY); Município de Marau, Estrada Ubaitaba/Ponta do Muta, km 71, estrada para o Sítio São Marcos, 8 Março 1983, *de Carvalho & Chautems 1666* (US); Marau, mata litorânea, para a Restinga, 25 April 1965, *Belém & Magalhães 911* (NY,US); Marau, mata litorânea, 29 April 1968, *Belém 3458* (US); ca. 5 km SE of Marau near junction with road to Caminho, S 14° 08', W 38° 59', 0-50 m, 15 May 1980, *Harley 22083* (NY); ca. 6 km na estrada para Ubaitaba, mata de restinga, 23 May 1991, *de Carvalho, Pennington, & Kobayashi 3278* (NY); 65 km NE of Itabuna, at mouth of Rio de Contas on the N bank opposite Itacaré, S 14° 15', W 39° 01', 1 April 1974, *Harley 17600* (NY,US); Município of Entre Rios, road W of Sabaúma, 2-5 km W of Sabaúma, 28 May 1981, *Mori & Boom 14177* (NY).

2. *Litothamnus ellipticus* R. King & H. Robinson, *Phytologia* 44:80. 1979. TYPE: BRAZIL. Bahía: Municípios Sta. Cruz de Cabralia e Porto Seguro, Rod. BR 367, a 18.7 km ao N de Porto Segura, 20 Mar 1978, *Mori, et al. 9751* (HOLOTYPE: US; Isotype: NY!).
Litothamnus saundersiae B. Turner, *Phytologia* 69(6):424. 1990. TYPE: BRAZIL. Bahía: Município de Porto Segura, ca. 13 km na estrada de Arraial d'Ajuda para Transcoso, 1 May 1990, *Carvalho & Saunders 3129* (HOLOTYPE: CEPEC; Isotype: TEX!).

Glabrous shrub, 2-4 m tall. Stems subcarnose, 4-6 angled, grooved when dry. Internodes 0.5-4.0 cm long. Leaves opposite, 4.5-14.5 × 2.2-5.0 cm, not noticeably reduced above; petioles stout, 3-10 mm, glabrous, a triangular stipule-like "ligule" borne between the upper base of the petiole and the stem; blades coriaceous, elliptic to obovate, surfaces glabrous, shiny above, dull below, trinervate from near the base, the veinlets usually rather prominent, apices rounded, margins entire-revolute, bases acute to cuneate. Heads numerous, disposed in a round-topped corymb, 4-6 cm tall and 9-12 cm wide; ultimate head bearing branchlets 2-9 mm long, glabrous. Involucres 2-seriate, phyllaries of ca. equal numbers in each series, subequal in length, 6-8 mm long, the inner elliptic, 5-9 veined, apices often long acuminate, margins ciliate, outer phyllaries oblanceolate to obovate, the outermost broadly obovate, irregularly and prominently veined, apices rounded to an apiculate point, margins entire. Florets ca. 15 per head; corollas white, tubular to funnelform, teeth ovate, densely papillose, 0.6-0.7 mm long. Anthers inserted at anthesis, ca. 2 mm long, collars short-cylindric, appendages oblong, 0.3 × 0.2 mm; style appendages linear, densely papillose, ca. 3.5 mm long. Achenes ca. 3.5 mm long, 5-ribbed, the ribs callose thickened at the base, surfaces glabrous or slightly hairy above. Pappus biseriate, white, of ca. 30 bristles, ca. 5 mm long, slightly connate at base, margins setose.

Liothamnus ellipticus occurs from the Itabuna area southward to Porto Seguro in the shrubby coastal zone of Bahía, Brazil (King & Robinson 1987). The species is adequately distinguished from *L. nitidus* in the key, while other information is given in the discussion of that species.

D.J.N. Hind of the Royal Botanic Gardens, Kew, is credited with first pointing out that *Liothamnus saundersiae* and *L. ellipticus* are conspecific.

Additional specimen examined: BRAZIL. Bahía: Município de Ilhéus, Faz. Barra do Manguinho, Ramal com entrada no km 10 da Rod. Pontal/Olivença, Coletas 3.5 km a Oeste de praia, Mattos Silva, et al. 2920 (NY).

ACKNOWLEDGMENTS

Several people provided information or made suggestions essential to this study. These include Harold Robinson and John Pruski of US, and B.L. Turner of TEX. Turner made available his correspondence with D.J.N. Hind of K concerning the status of *Liothamnus saundersiae*. This study was based upon loans of herbarium specimens from GH, NY, and TEX, and specimens examined during a visit to US. The courtesies extended by these institutions are greatly appreciated.

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